

EPA - General Parameters

Analytical Results Report

Laboratory:

General Parameters

Tech. Directive:

EPAGP256 rev. 1

Analyst:

Kristie Hargrove

Quality Control Data Summary

			Analytes	Nitrate+Nitrite (NO ₃ +NO ₂ -N)			Ammonia (NH ₄ -N)					
			Codes	00630			6484-52-2					
			Methods	FIA 10-107-04-2-A			FIA 10-107-06-1-A					
			Unit	mg/L			mg/L					
			MDL	0.014			0.012					
			QL	0.100			0.050					
QC Sample ID	Additional ID	Date Prepared	Date Analyzed	Data	True Value	% REC.	Data	True Value	% REC.			
MB	Blank Nanopure	4/25/2011	4/25/2011	ND	-	-	-	-	-			
MB	Blank Nanopure	4/25/2011	4/25/2011	ND	-	-	-	-	-			
MB	Blank Nanopure	4/26/2011	4/26/2011	-	-	-	ND	-	-			
MB	Blank Nanopure	4/26/2011	4/26/2011	-	-	-	ND	-	-			
MB	Blank Nanopure	4/27/2011	4/27/2011	-	-	-	ND	-	-			
MB	Blank Nanopure	4/27/2011	4/27/2011	-	-	-	BQL (0.024)	-	-			
SS	ERA # 48	12/15/2010	4/25/2011	9.09	9.29	97.9	-	-	-			
SS	ERA # 48	12/15/2010	4/25/2011	9.07	9.29	97.6	-	-	-			
SS	ERA # 48	12/15/2010	4/26/2011	-	-	-	3.47	3.40	102			
SS	ERA # 48	12/15/2010	4/26/2011	-	-	-	3.45	3.40	101			
SS	ERA # 48	12/15/2010	4/27/2011	-	-	-	3.38	3.40	99.4			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	BQL (0.090)	0.100	90.0	BQL (0.048)	0.050	96.0			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	0.251	0.250	100	0.245	0.250	98.0			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	1.06	1.00	106	1.01	1.00	101			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	20.2	20.0	101	19.8	20.0	99.0			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	4.95	5.00	99.0	4.86	5.00	97.2			
CCC	Calibration Check Standard	4/11/2011	4/25 & 4/26/2011	10.0	10.0	100	9.74	10.0	97.4			
CCC	Calibration Check Standard	4/11/2011	4/27/2011	-	-	-	0.097	0.100	97.0			
CCC	Calibration Check Standard	4/11/2011	4/27/2011	-	-	-	9.61	10.0	96.1			
MS	PGDW20-0411 SPIKE	4/25-4/27/2011	4/25-4/27/2011	6.95	ND (6.17)	113	6.09	0.125 (6.17)	96.7			
MS	PGDW14-0411 SPIKE	4/25-4/27/2011	4/25-4/27/2011	0.911	0.359 (6.17)	8.95*	2.63	ND (6.17)	42.6*			

EPA - General Parameters Analytical Results Report

Laboratory:

General Parameters

Tech. Directive:

EPAGP256 rev. 1

Analyst:

Kristie Hargrove

Quality Control Data Summary

			Analytes	Nitrate+Nitrite (NO ₃ +NO ₂ -N)			Ammonia (NH ₄ -N)					
			Codes	00630			6484-52-2					
			Methods	FIA 10-107-04-2-A			FIA 10-107-06-1-A					
			Unit	mg/L			mg/L					
			MDL	0.014			0.012					
			QL	0.100			0.050					
QC Sample ID	Additional ID	Date Prepared	Date Analyzed	Data	True Value	% REC.	Data	True Value	% REC.			
MS	PGDW14-0411 SPIKE	4/25-4/27/2011	4/25-4/27/2011	0.801	0.359 (6.17)	7.16*	2.90	ND (6.17)	47.0*			
MS	LABORATORY CONTROL SPIKE	4/25-4/27/2011	4/25-4/27/2011	5.84	0.00 (6.17)	94.7	5.76	0.00 (6.17)	93.4			

Comments:

The data quality objective for the accuracy of continuing calibration check standards is 90-110% recovery. The data quality objective for the ERA #48 is 71.2-131% for NH₄. The data quality objective for the ERA #48 is 81.5-116% for NO₃+NO₂. The data quality objective for matrix spikes is 80-120% recovery. These objectives were met for the matrix spikes, calibration check standards, and the ERA second source standards. The matrix spike was prepared by adding 50 uL of a 500mg/L standard into 4 mL of sample yielding a spike concentration of 6.17 mg/L. The matrix spike recovery was calculated according to the equation: % Recovery = 100 x (Spiked sample concentration (DATA) - Native sample concentration)/Spike concentration. * The matrix spike prepared for PGDW14-0411 did not meet the data quality objective. The spike was prepared twice with similar results. A laboratory control spike was analyzed. The laboratory control spike resulted in 94.7% recovery for NO₃+NO₂ and 93.4% recovery for NH₄. These results indicate a possible matrix interference.

Notes:

1. **MB** - Method Blank. **CCC** - Continuing Calibration Check. A calibration standard analyzed within the batch of samples. **LCS** - Laboratory Control Spike. A laboratory blank spiked with analytes at known concentrations. **MS** - Matrix Spike. A field sample spiked with known concentrations of analytes. The field sample id is identified. The True Value column for matrix spikes list the unspiked native sample concentration along with the spike concentration in parentheses. **SS** - Samples obtained from the second sources are identified by their designated names. **DUP** - Field sample duplicate analysis. A sample selected by the lab analyst to analyze as a duplicate. It is reported in the sample result section. **% REC** - Percent Recovery. Calculated as the percentage of the results to the true values. It equals to % accuracy for CCC.

MEMORANDUM (LABORATORY DATA REPORT)

EPA - General Parameters

In reply refer to: 11-KH37

To: Rick Wilkin

From: Kristie Hargrove

Lab: General Parameters

Thru: Mark White
Lynda Callaway

Date: 5/17/2011

Technical Directive No.: EPAGP256 rev. 1
Task No.: 23993

Originator: Rick Wilkin
Copies: Rick Wilkin
Steve Vandegrift
Lynda Callaway
Kristie Hargrove

Sample Site/Project: Pavillion Groundwater
Date Collected: 4/14-4/21/2011
Date Received: 4/21 & 4/22/2011
Date Analyzed: 4/25-4/27/2011
No. Samples Analyzed: 13, 6

Sample Set No.: 6030, 6032
Sample Matrix: water
Analysis Type: NO₃ + NO₂, NH₄
Sample Preparation: None

Method(s) Used : Nitrate+Nitrite Lachat FIA 10-107-04-2-A
Ammonia Lachat FIA 10-107-06-1-A
RSKSOP-214, rev. 5 - Quality Control Procedures for General Parameters
using Lachat Flow Injection Analyses

Comments:

Quality control measures performed along with your samples included analysis of method blanks, sample matrix spikes, laboratory sample duplicates, calibration check standards, and second-source quality control samples as outlined in RSKSOP-214, revision 5. The MDL for NO₃+NO₂ was determined on 1/13/2011. The MDL for NH₄ was determined on 1/27/2011. Note: The matrix spike prepared for PGDW14-0411 did not meet the data quality objective. The spike was prepared twice with similar results. A laboratory control spike was analyzed. The laboratory control spike resulted in 94.7% recovery for NO₃+NO₂ and 93.4% recovery for NH₄. These results indicate a possible matrix interference.

EPA - General Parameters Analytical Results Report

Laboratory:

General Parameters

Technical Directive:

EPAGP256 rev. 1

Analyst:

Kristie Hargrove

Sample Results

				Analytes		Nitrate+Nitrite (NO ₃ +NO ₂ -N)		Ammonia (NH ₄ -N)			
				Codes		00630		6484-52-2			
				Methods		FIA 10-107-04-2-A		FIA 10-107-06-1-A			
				Unit		mg/L		mg/L			
				MDL		0.014		0.012			
				QL		0.100		0.050			
Field Sample ID	Lab Sample ID	Date Collected	Date Analyzed	Data	DF	Data	DF				
PGDW20-0411	6030-1	4/18/2011	4/25-4/27/2011	ND	1	0.125	1				
PGDW26-0411	6030-2	4/18/2011	4/25-4/27/2011	1.37	1	ND	1				
PGDW30-0411	6030-3	4/18/2011	4/25-4/27/2011	ND	1	BQL (0.036)	1				
PGDW32-0411	6030-4	4/18/2011	4/25-4/27/2011	ND	1	0.125	1				
PGDW32d-0411	6030-5	4/18/2011	4/25-4/27/2011	ND	1	0.132	1				
EPAMW02-0411	6030-6	4/19/2011	4/25-4/27/2011	ND	1	2.88	1				
EPAMW02-0411	6030-6 LAB DUP	4/19/2011	4/25-4/27/2011	-	-	2.90 (RPD=0.692)	1				
EPAMW02d-0411	6030-7	4/19/2011	4/25-4/27/2011	ND	1	2.82	1				
EPAMW02d-0411	6030-7 LAB DUP	4/19/2011	4/25-4/27/2011	ND (RPD=NA)	1	-	-				
Temp. Blank	6030-8	4/14/2011	-	-	-	-	-				
Trip Blank	6030-9	4/14/2011	4/25-4/27/2011	ND	1	ND	1				
EPAMW02-0411	6030-10	4/19/2011	-	-	-	-	-				
PGDW05-0411	6030-11	4/19/2011	4/25-4/27/2011	ND	1	0.059	1				
PGDW45-0411	6030-12	4/19/2011	4/25-4/27/2011	0.640	1	ND	1				
EPAMW01-0411	6030-13	4/20/2011	4/25-4/27/2011	ND	1	4.25	1				
PGDW41-0411	6030-14	4/20/2011	4/25-4/27/2011	17.5	1	ND	1				
Field Blank	6030-15	4/18/2011	4/25-4/27/2011	ND	1	ND	1				
PGDW14-0411	6032-1	4/20/2011	4/25-4/27/2011	0.359	1	ND	1				
PGDW49-0411	6032-2	4/20/2011	4/25-4/27/2011	8.75	1	ND	1				
PGDW23-0411	6032-3	4/21/2011	4/25-4/27/2011	ND	1	0.071	1				
PGDW44-0411	6032-4	4/21/2011	4/25-4/27/2011	ND	1	0.229	1				
PGDW44-0411	6032-4 LAB DUP	4/21/2011	4/25-4/27/2011	ND (RPD=NA)	1	0.219 (RPD=4.46)	1				
Field Blank	6032-5	4/21/2011	4/25-4/27/2011	ND	1	ND	1				

EPA - General Parameters Analytical Results Report

Laboratory: General Parameters

Technical Directive: EPAGP256 rev. 1

Analyst: Kristie Hargrove

Sample Results

			Analytes	Nitrate+Nitrite (NO ₃ +NO ₂ -N)		Ammonia (NH ₄ -N)			
			Codes	00630		6484-52-2			
			Methods	FIA 10-107-04-2-A		FIA 10-107-06-1-A			
			Unit	mg/L		mg/L			
			MDL	0.014		0.012			
			QL	0.100		0.050			
Field Sample ID	Lab Sample ID	Date Collected	Date Analyzed	Data	DF	Data	DF		
Equipment Blank	6032-6	4/21/2011	4/25-4/27/2011	ND	1	ND	1		
Temp. Blank	6032-7	4/14/2011	-	-	-	-	-		

Comments:

The data quality objective for the precision of sample duplicates is a relative percent difference (RPD) of < 10%, which was met for this set of samples, that are within the calibration range. The MDL for NO₃+NO₂ was determined on 1/13/2011. The MDL for NH₄ was determined on 1/27/2011.

Notes:

- If the parameter was detected above the quantitation limit (QL), the numeric result is reported; **BQL** denotes that the parameter was not detected at or above the quantitation limit; **BQL ()** denotes that the parameter was detected above the method detection limit (MDL) but below QL and the estimated numeric result is reported in parenthesis; **ND** denotes that the parameter was not detected at all. All the results are corrected with dilution factors (DF), if applicable. **NA** means not applicable.
- "-" denotes that the information is not available or the analyte is not analyzed.